

SADC's response to climate change – the role of harmonised law and policy on mitigation in the energy sector

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Abstract

The negligible levels of energy-related GHG emissions attributable to the Southern African sub-region translates into the sub-region contributing relatively little towards global climate change. Notwithstanding, the member states comprising the Southern African Development Community (SADC) are among the most vulnerable to the trans boundary effects of global climate change. Existing SADC climate change policy documents highlight the important role of the energy sector in climate change mitigation. Furthermore, various international, African Union and SADC legal instruments stress the crucial role of harmonised law and policy as climate change adaptive measure. It is the central hypothesis of this paper that harmonised sub-regional law and policy aimed at regulating SADC member states' mitigation efforts in the energy sector is a crucial climate change adaptive strategy. This hypothesis is based on the mandates for the formulation of a SADC climate change action plan and for mitigation in the energy sector. These mandates are contained in the texts of the SADC-CNGO Climate Change Agenda, 2012 and the Southern Africa Sub - Regional Framework on Climate Change, 2010 respectively. It is the main aim of this paper to investigate recent developments in the formulation of harmonised SADC law and policy on climate change in general and law and policy pertaining to mitigation in the energy sector specifically. In achieving the stated aim, themes to be investigated by means of a literature study are those of energy-related greenhouse gas emissions and global climate change and harmonised sub-regional policy on mitigation in the energy sector as adaptive measure in the SADC.

Keywords: *energy-related GHG emissions, climate change, sub-regional policy, adaptation, mitigation*

1. Introduction

According to the 2007 Report of the Inter-governmental Panel on Climate Change (IPCC) the largest growth in greenhouse gas (GHG) emissions between 1970 and 2004 has come from the energy supply sector, transport and industry (IPCC, 2007). In its 2008 *World Energy Outlook*, the International Energy Agency (IEA) warns that:

Current global trends in energy supply and consumption are patently unsustainable – environmentally, economically and socially. It is not an exaggeration to claim that the future of human prosperity depends on how successfully we tackle the two central energy challenges facing us today: securing the supply of reliable and affordable energy; and effecting a rapid transformation to a low-carbon, efficient and environmentally benign system of energy supply. (IEA WEO 2008)

While industrialised countries and rapidly developing economies are the largest emitters of energy-related carbon dioxide (CO₂) and other GHGs, the impacts of climate change will be most evident in developing countries and regions (Modi, McDade, Lallement & Saghir, 2006; IPCC, 2007). African countries are particularly vulnerable to climate change because most states have fewer resources to cope with climate change and have low adaptive capacity (Pressend, 2011). The concept of vulnerability is important for understanding climate change in the context of social and human development as it refers to the expected magnitude of adverse effects climate change poses to SADC. In the first instance, human vulnerability will increase as a result of both extreme weather events and long-term environmental degradation resulting from climate change (Füssel & Klein, 2006). Secondly, vulnerability draws on the various manifestations of social and human deprivation, such as: social exclusion, gender discrimination, migration, employ-

ment, health and education, as well as resilience of those affected. In short, climate change will have the effect of adversely affecting the vulnerable status of the region by impacting negatively on the general development of member states and individuals alike. The impacts generally foreseen include, but are not restricted to: reduced agricultural production; reduced fresh water availability; loss of biodiversity; increased food insecurity, increased health problems; and increased migration (ADF, 2010).

Addressing the challenge of climate change clearly requires more than technical and environmental solutions. The trans boundary nature of the effects of climate change warrants comprehensive strategies based on intense cooperation which link climate change with the broad socio-economic and political development frameworks of SADC member states (SADC-CNGO Regional Policy Paper 7 2012). The southern African sub-region comprises the total geographical area occupied by member states of the Southern African Development Community (SADC) which includes: Angola, Botswana, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe (www.sadc.org). SADC has a combined population of over 228 million people and an aggregate Gross Domestic Product (GDP) of \$226.1 billion (SADC, 2003; ISS, 2006). Despite its relatively high aggregate GDP, individual countries' social and economic growth and development vary considerably. The national economic development status of the sub-region is a combination of advanced developing countries like

South Africa, developing countries like Zimbabwe, and least developed countries like Malawi. The general characteristic of the sub-region's aggregate economy, however, is that of a developing sub-region (Pressend, 2011).

The main sources of CO₂ emission in Southern Africa relate directly to the generation and consumption of energy, namely fossil fuel burning (liquid fuels and especially coal in the thermal power stations of South Africa) and deforestation due to the use of traditional source of biomass as primary energy source (Kandji *et al* 2006; Chishakwe, 2010, Pressend, 2011). Therefore, while the sub-region's contribution to global energy-related GHG emissions is low, the SADC energy sector is the highest contributor to GHG emissions in the sub-region itself. Deforestation in the sub-region is characterised by a combination of forests cleared for agriculture or for commercial purposes and the increasing demand for biomass as an energy source. The decimation of forest-areas resulting from the fulfilment of energy needs inevitably leads to deforestation which in turn impacts negatively on global climate change (Goldemberg & Coelho, 2004; Agyei, 1998; Olander *et al*, 2009).

For SADC member states, the priority is on mitigation and also on adapting to increased climate variability and climate change (Lesolle, 2012). With reference to the areas of mitigation, the Southern Africa Sub-Regional Framework on Climate Change 2010 (Framework) specifically highlights the energy sector (Chishakwe, 2010). In conjunction hereto the SADC-CNGO Climate Change Agenda (Agenda) prescribes the formulation of a

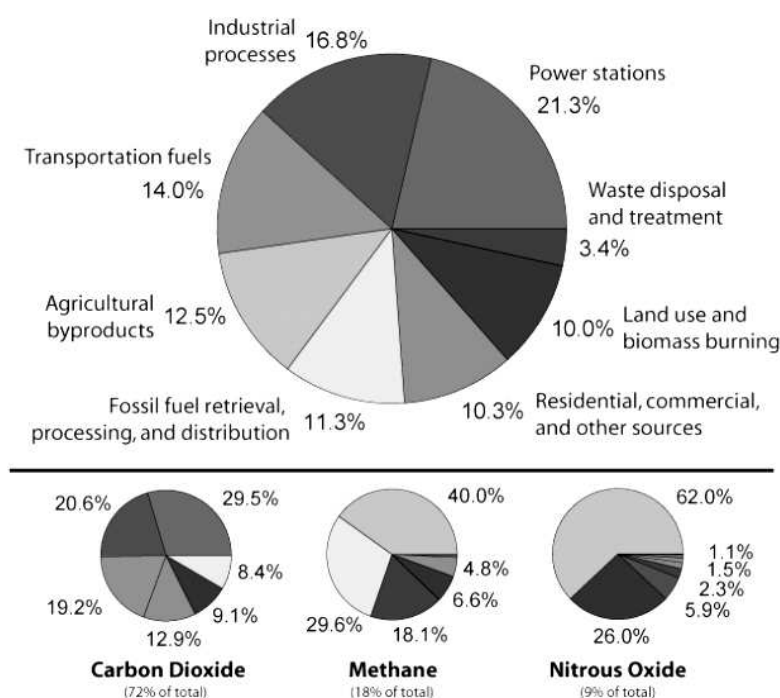


Figure 1: SADC GHG emissions per sector in 2012

Source: <http://timeforchange.org/cause-and-effect-for-global-warming>

SADC Climate Change Action Plan which should contain and reflect the SADC common position on climate change. In plain terms, the Agenda mandates the formulation of a single, coherent SADC policy document on climate change reflective of SADC member states' common position on climate change. This article is written from the central hypothesis that harmonised sub-regional policy responses aimed at regulating mitigation efforts in the sub-region's energy sector qualifies as climate change adaptation measure. Energy-related GHG emissions as factor contributing to global climate change and SADC law and policy on mitigation in the energy sector are themes related to this hypothesis. In addressing these themes, a series of inter-related topics will be discussed, most notably: energy-related GHG emissions and global climate change; energy-related GHG emissions and climate change in the Southern African sub-regional context; the energy sector as climate change mitigation area in SADC; and SADC climate change policy and programmes as adaptive measure. Recommendations as to the content of future SADC climate change policy and programmes pertaining to mitigation via energy sector reform will be made in the final instance.

2. Energy-related GHG emissions and climate change as global environmental challenge

2.1 Energy and climate change

Climate change has been labelled as the defining human development challenge of the 21st Century (UNDR 2007/2008). The rapid increase in energy-related GHG emissions is a topic central to the global climate change debate and is cause for major environmental concern. According to the

International Energy Agency (IEA), the direct combustion of fossil fuels represents by far the largest source of energy-related CO₂ emissions comprising more than 80% of anthropogenic emissions (IEA, 2011). In 2009 electricity and heat generated from the direct combustion of fossil fuels contributed 41% towards global CO₂ emissions, with coal, oil and gas being the major contributors. While coal represented only one-quarter of the total primary energy supply, it accounted for 43% of global CO₂ emissions due to its heavy carbon content per unit of energy released (IEA 2011). These figures become even more alarming considering that coal is filling much of the growing energy demand of rapidly developing economies and, with projections showing that, without additional measures, intensified use of coal will radically increase CO₂ emissions by 2035 (IEA WEO, 2009). In fact, if the next decade of energy-related CO₂ emissions follow the linear trend of the previous decade, dangerous climate change will be unavoidable (IEA, 2012). Projections for energy use point precisely in this direction as current investment patterns are putting in place a carbon intensive energy infrastructure with coal playing a dominant role.

2.2 Energy-related GHG emissions and climate change in the African context

The IEA states that the situation surrounding energy in Least Developed Countries (LDC) situated in the SADC region is one characterised by almost non-existent levels of access to modern energy services (IEA WEO, 2010). Seven of the fourteen member states comprising SADC are currently listed by the United Nations as LDCs (Angola, the Democratic Republic of Congo, Lesotho, Malawi, Mozambique, Tanzania and Zambia) (www.unc-

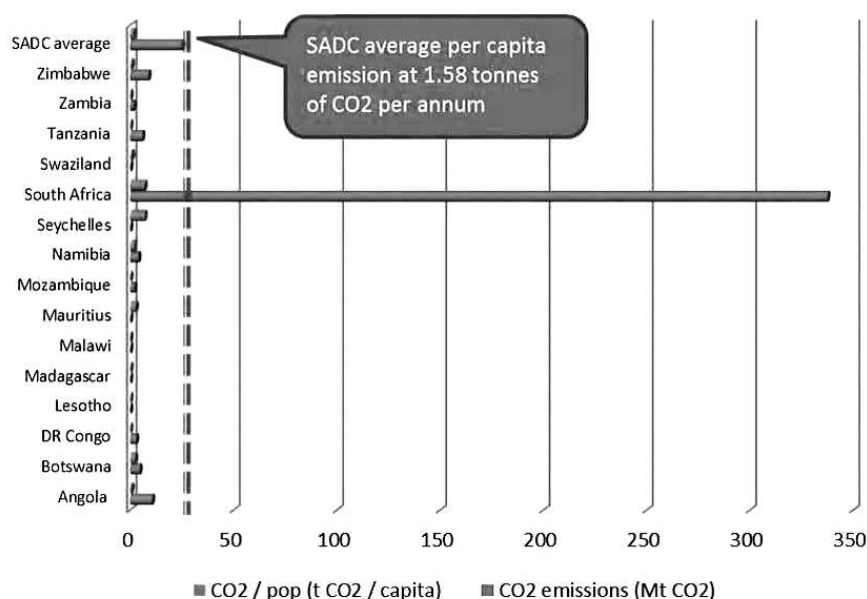


Figure 2: GHG emissions indicators of SADC member states

Source: 2010 Key World Energy Statistics

tad.org). In SADC, energy consumption and, as a result, GHG emissions are low both per capita and on aggregate and the primary concern is not necessarily curbing emissions but rather the conservation of the local environment and natural resources (Lesolle 2012; Modi *et al.*, 2006).

On account of its low per capita energy consumption, the SADC region contributes relatively little towards over-all energy related GHG emissions globally (IEA WEO, 2010). Current fossil fuel consumption levels in SADC are so low that even if these countries increased consumption at an annual rate of 10% per year, from 2010 to 2015, the associated per capita GHG emissions will remain at levels that are less than five percent of current levels in industrialised countries (IEA, 2011). Increased GHG emissions from SADC should therefore not likely have any significant impact on the climate, both local or globally. The foregoing statement should, however, be taken against the backdrop of population growth and accompanying human needs and the effect thereof on energy-related GHG emissions in Africa. The current African population of 954 million people – 14% of global population, will grow to 17% by 2025 and by 2050 a quarter of the world's population will live in Africa. While this population explosion sets the scene for future economic growth, the growing demand for food and energy it brings about will undoubtedly contribute toward increasing anthropogenic GHG emissions and ultimately climate change (Cilliers, 2009). Naturally, this is true only if the *status quo* pertaining to the fossil fuel intensive nature of energy generation in Africa prevails. In short, population growth in Africa will result in an increased demand for energy, leading to higher levels of energy-related GHG emissions and ultimately culminating in heightening the continent's vulnerability to climate change. The energy sector and in particular the provision of electricity for southern Africa's population and industries comprise a complex issue without even adding climate change to the equation. If energy needs throughout the sub-region increases incrementally with population growth and SADC intends on reducing its energy-related GHG emissions a transition to more climate-friendly sources of energy is inevitable. This requires redefining SADC's competitive advantage from attracting energy-intensive sectors on the basis of non-renewable energy, such as coal, to building a new advantage around low carbon technology and energy (Ruppel, 2012). This shift to a low carbon energy future for the sub-region will need to be regulated in terms of sub-regional law and policy responses.

3. Regional policy as climate change adaptation measure

Climate change is an environmental challenge without borders or geographical limits. While climate

change is globally caused, its impacts are locally felt and nowhere more so than in vulnerable regions such as Southern Africa. The trans boundary nature of climate change and its impacts necessitates harmonised solutions.

At the African Union (AU) level, the *AU-NEPAD African Action Plan 2008* expressly states the important role harmonised regional policies will play in adapting to climate change. At the international level, the development of law and policy related to climate change originated from the establishment of the United Nations Intergovernmental Negotiating Committee in 1990 and the subsequent drafting of the *United Nations Framework Convention on Climate Change* (UNFCCC) and the *Kyoto Protocol*.

These two documents stress the importance of climate change mitigation and identify the implementation measures needed for the mitigation envisaged. Mitigation refers to efforts to reduce or prevent emission of GHGs and, according to the text of the UNFCCC, should take the form of reducing GHG emissions in terms of cooperative action. The emission reduction-based climate change mitigation intended by the UNFCCC was to have the so-called Annex I countries reduce their GHG emissions to 1990 levels by the year 2000 (Article 4(2) of the UNFCCC). The measures needed to achieve the proposed mitigation is listed in the Kyoto Protocol and includes emissions trading, the clean development mechanism (CDM), and joint implementation (Articles 17,12 and 6 of the Kyoto Protocol).

Equally as important as mitigation is the process of adapting to climate change. Adaptation in the field of climate change refers to changes in processes, practices and structures to moderate potential threats associated with climate change (McDonald, 2011, Leary, Dokken & White, 2001). This definition should be seen to include adaptive action at the regional level – a viewpoint underpinned by the UNFCCC's reference to the important role of regional law in facilitating adaptation to climate change (Article 4(1) of the UNFCCC). The author submits that adaptation should therefore be seen to include the formulation of harmonised sub-regional law geared towards collective action relating to climate change mitigation and adaptation (Lubbe & Barnard, 2012).

3.1 SADC mandate for harmonised sub-regional responses to climate change

At the SADC level, the important adaptive role of harmonised regional policies is recognised by a number of provisions contained in various regional instruments. Article 5(2)(a) of the *Treaty of the Southern African Development Community*, 1992 (SADC Treaty) states that in order for the region to attain the objective of sustainable development, the

harmonisation of political and socio-economic policies is necessary. With reference to energy policies specifically, article 3(1) and article 4 of the *SADC Protocol on Energy*, 1996 (Energy Protocol) states as one of its objectives, the harmonisation of national and regional energy policies on matters of common interest in order to provide sustainable energy services (Ruppel, 2012).

3.1.1 The SADC Energy Action Plan, 1997 and the Energy Sector Activity Plan, 1999

The *SADC Energy Action Plan* (Action Plan) was established in terms of the provisions of the SADC Energy Protocol and encompasses a comprehensive action plan for harmonised regional energy activities. The provisions contained in both the Action Plan and the *Energy Co-operation Policy and Strategy Document*, 1996 were the impetus for drafting the SADC Energy Sector Activity Plan in 1999 (Activity Plan) which sets out the activities and time-frame related to proposed regional energy activities.

Activities regulated by the Activity Plan are grouped under four focus areas, namely: energy trading; investment and finance; training and organisational capacity building; and information and experience exchange. The Activity Plan and its related activities ultimately revolve around the objective of increasing levels of access to modern energy sources in the region. It should be noted that the Activity Plan indeed refers specifically to climate change and the concerns and challenges it poses to the SADC energy sector. In this regard, the Activity Plan states that mobilising climate change funding will play an important role in facilitating adaptation of the energy sector to the impacts climate change is set to have (AECOM, 2009).

3.1.2 The Regional Indicative Strategic Development Plan, 2003

The Regional Indicative Strategic Development Plan (RISDP) acknowledges climate change as an environmental challenge resulting from and contributing towards the current developmental status of the region and refers to the important role of harmonised regional environmental policies as adaptive measure. The overall goal of the regional environmental intervention envisaged by the RISDP is to ensure the equitable and sustainable use of the environment and natural resources for the benefit of present and future generations.

In order to attain this goal, the RISDP identifies harmonised legal and regulatory frameworks focused on the promotion of regional cooperation on environmental issues as focus area. As mechanism of implementation, the RISDP proposes regional environmental policies embodied in multi-lateral environmental agreements concluded in terms of existing international climate change poli-

cy. The RISDP furthermore sets time-bound targets for the implementation of the regional environmental policies envisaged by its provisions. These include the finalisation of legal instruments for regional cooperation in environment and resources by 2006 and the development and implementation of environmental standards and guidelines by 2008.

3.1.3 Southern Africa Climate Change Framework, 2010

The path towards a SADC common position on climate change starts prior to the 17th Conference of Parties on Climate Change (COP 17), with the SADC Council of Non-Governmental Organisations (SADC-CNGO Regional Policy Paper 7 2012). The SADC-CNGOs was formed in 1998 to facilitate meaningful engagement of the people of the region with SADC Secretariat at regional level, and with the Member States at national level through national NGO umbrella bodies (<http://www.sadccngo.org/>). Following an intensive consultation process with its members and stakeholders, the SADC-CNGO commissioned a background research which was later transformed into a policy paper on climate change. The policy paper outlined the following as the key SADC positions to be taken to COP 17: legally binding emissions reduction targets; funding support for climate change; rejection of private market mechanisms; women focussed interventions; adaptation; mitigation; technology transfer; just transition; national policies and strategies; and ecological debt (Pressend, 2011). It paved the way for further consultation among SADC Member States on their shared position on climate change for COP17, which resulted in the drafting of a Southern Africa Sub-Regional Framework on Climate Change in 2010.

While the Framework is only an indicative framework and therefore not legally binding among SADC member states, it is, however, a good start in that it makes recommendations to SADC countries to streamline climate change responses at the sub-regional level. The Framework not only reviews responses by member states to the climate crisis in terms of adaptation, mitigation, financing and technology transfer, it also flags out the priorities for the region. Adaptation was identified as the most pressing issue to be prioritized in the regional response framework. Within the Framework, proposed adaptation programmes include the following: disaster risk reduction and management; sectorial planning and implementation and building economic and social resilience (SADC-CNGO Policy Paper 7, 2012).

The four identified mitigation areas are: the energy sector; Reduced Emissions from Deforestation and Degradation (REDD) and REDD plus mechanisms; Land Use, Land Use Change and

Forestry (LULUCF); and International Carbon Markets (SADC-CNGO Policy Paper 7, 2012). Mitigation by the energy sector is seen to be the domain of those countries that are huge carbon emitters, most notably South Africa with its carbon intensive energy sector (Pressend, 2011).

The Framework describes energy sector mitigation as policies, programmes, and projects aimed at: scaling up investments for increased access to affordable and cleaner energy sources; developing appropriate alternative energy sources; increase energy efficiency; applying the precautionary approach to the development of alternative renewable energy sources; develop appropriate transport plans; develop standards and regulations to engender mitigation; and promote cleaner production and infrastructural development (Southern Africa Climate Change Framework, 2010). In conjunction with the provisions of the Framework, COP 17 also introduced voluntary mitigation actions on developing countries which, in the context of energy sector reform, refer to a transition to a low carbon economy (Lesolles, 2012).

Mitigation actions by means of energy reforms in the Southern African sub-region should therefore be seen to relate to decreasing fossil fuel reliance and shifting to more renewable energy options (Ruppel, 2012). This will have the result of reducing energy-related GHG emissions thereby reducing the extent of global warming and the effects of climate change. With specific reference to mitigation in the energy sector, the Programme for Basic Energy and Conservation (ProBEC) is a SADC climate change project geared towards basic energy conservation. Currently, ProBEC is actively involved in Malawi, Lesotho, Mozambique, Tanzania, Swaziland, Zambia, Botswana, Namibia and South Africa. ProBEC aims to ensure that low-income population groups satisfy their energy requirements in a socially and environmentally sustainable manner with a specific target on biomass energy. One of the foreseeable results of ProBEC interventions (specifically shifting from fossil fuels to biofuels) undertaken thus far is climate change mitigation in the form of reduced energy-related GHG emissions (<http://www.probec.net>).

3.1.3 SADC climate change agenda

After its success in drafting the Southern Africa Sub-Regional Framework on Climate Change, the SADC-CNGO convened a Regional Policy Dialogue session under the theme 'Beyond Durban - What is the regional climate change and sustainable development agenda' in 2012. One of the specific objectives of the dialogue session was to discuss the Southern Africa Common Position regarding COP17 and priority issues for SADC. The dialogue session resulted in the drafting of a regional policy paper named for the dialogue itself and con-

tains an Agenda for SADC beyond COP17. The Agenda is not intended as a comprehensive roadmap for SADC and is described by its drafters as 'deliberately minimalist for it to be doable'. It does, however, lay the groundwork for future sub-regional dialogue, policy formulation and implementation.

Due to its minimalist content, the Agenda itself does not contain any specific reference to energy or the role of energy sector reform in climate change mitigation. It does, however, refer specifically to the need for harmonised sub-regional climate change responses. With specific reference to the importance of a harmonised sub-regional climate change strategy, the agenda proposes that SADC should put in place and implement a Regional Climate Change Programme of Action. The programme of action should include priority interventions for the region such as adaptation as spelt out in Cancun, Durban and in Rio Declarations (SADC-CNGO Policy Paper 7, 2012). Further key components of the Agenda are: research and analysis; national climate change policies and strategies; implementation of the Durban Platform Action; regional and domestic resource mobilisation; adaptation; mitigation and climate governance (SADC-CNGO Policy Paper 7, 2012). At the time of writing, no progress towards the formulation of a SADC Climate Change Programme of Action had been made.

4. Conclusion and recommendations

Climate change resulting from energy-related GHG emissions is a global challenge without physical or geographical borders which pose various threats to vulnerable regions such as SADC. The trans boundary nature of climate change and its effects necessitates regulatory action in the form harmonised law and policy responses among SADC member states. Although a number of climate-related programmes and initiatives exist in SADC, much still needs to be done in terms of SADC climate law and policy. The current SADC climate change law and policy framework comprises the Southern African Sub-regional Climate Change Framework and the SADC-CNGO Climate Change Agenda. One of the areas of climate change mitigation identified by the SADC climate change framework is the energy sector and it furthermore specifies the mitigation actions to be taken by the energy sector. These provisions echo the voluntary mitigation measures prescribed to developing regions via COP 17, which mandates developing regions with a 'transition to a low carbon economy'. It is submitted that the role of the energy sector in climate change mitigation in developing regions such as SADC pertains to a shift from overtly fossil fuel-based energy sectors to more renewable energy sources. It is furthermore submitted that the energy sector reforms needed to achieve this transition to a low carbon economy

based on less carbon-intensive energy sources should be regulated in terms of harmonised sub-regional law and policy.

The SADC Climate Change Framework and Agenda are steps in the right direction for harmonised sub-regional responses to climate change but they do not remedy the lack of a single, coherent sub-regional climate change policy document. This legal lacuna, in the mind of the author, can only be addressed with the formulation of a SADC Climate Change Programme of Action with sector-specific action plans. These sector-specific action plans must set out detailed policies and programmes of action on the mitigation areas of implementation as identified by the SADC Climate Change Framework. These should include: the development of appropriate alternative low carbon energy sources; increasing energy efficiency and the application of the precautionary approach to the development of low carbon renewable energy in the sub-region. A sub-regional energy sector action plan outlining SADC's common position on energy sector climate change mitigation is accordingly proposed. An energy sector action plan as sector-specific area of the overall SADC Climate Change Programme of Action will be crucial in aligning and then guiding the energy activities of member states towards improving climate change mitigation. It will ensure that shared climate change policy objectives are clearly defined and pursued through commonly agreed energy strategies among member states.

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